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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/743,002	11/01/1996	HERBERT DAMSOHN	027/43042	3122

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CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

[REDACTED] EXAMINER

LEO, LEONARD R

ART UNIT	PAPER NUMBER
3743	

DATE MAILED: 02/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/743,002	Applicant(s) Damsohn et al.
	Examiner Leonard R. Leo	Art Unit 3743

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on Dec 11, 2001
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 22, 31-35, and 38 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 22, 31-35, and 38 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892) 18) Interview Summary (PTO-413) Paper No(s). _____
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) Notice of Informal Patent Application (PTO-152)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) Other: _____

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DETAILED ACTION

Claims 22, 31-35 and 38 are pending, claim 32 remains withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22, 31 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karbach et al in view of Brzezinski and Melnyk et al.

Karbach et al discloses all the claimed limitations except lugs directly attached to the tube walls nor latticed tube bottoms.

Brzezinski discloses a heat exchanger comprising a tube 1 having opposed walls 8, 9 and a turbulating insert 5 with lugs 15 thereon; wherein the prior art welded the lugs directly to the tube walls (1, lines 57-64) for the purpose of minimizing material and weight of the heat exchanger.

Melnyk et al discloses a heat exchanger comprising a shell 12 joined to latticed tube bottoms 24 receiving a plurality of tubes 18 for the purpose of providing a fluid tight manifold.

Since Karbach et al and Brzezinski are both from the same field of endeavor and/or analogous art, the purpose disclosed by Brzezinski would have been recognized in the pertinent art of Karbach et al.

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Since Karbach et al and Melnyk et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Melnyk et al would have been recognized in the pertinent art of Karbach et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Karbach et al lugs directly welded to the tube walls for the purpose of minimizing material and weight of the heat exchanger as recognized by Brzezinski, *and* latticed tube bottoms receiving a plurality of tubes for the purpose of providing a fluid tight manifold as recognized by Melnyk et al. Although Melnyk et al discloses the tube bottoms are brazed, one of ordinary skill in the art would employ welding to achieve stronger joints

Regarding claim 31, Karbach et al discloses the elements are welded (column 5, lines 29-30).

Regarding claim 38, the tube bottoms 24 of Melnyk et al are preformed, since the tubes 18 are inserted therein.

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karbach et al in view of Brzezinski and Melnyk et al as applied to claims 22, 31 and 38 above, and further in view of Kim.

The combined teachings of Karbach et al, Brzezinski and Melnyk et al lacks tubes having spacing elements.

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Kim discloses a heat exchanger comprising a shell joined to lattice bottoms 2 receiving a plurality of tubes 1; wherein the tubes have spacing elements 3 for the purpose of providing support.

Since Karbach et al and Kim are both from the same field of endeavor and/or analogous art, the purpose disclosed by Kim would have been recognized in the pertinent art of Karbach et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Karbach et al tubes having spacing elements for the purpose of providing support as recognized by Kim.

Regarding claim 34, it has been held that the term "integral" is sufficiently broad to embrace constructions united by such means as fastening and welding. *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973).

Response to Arguments

Regarding applicants' remarks with respect to the secondary reference of Brzezinski et al, as noted in the previous Office action:

Brzezinski discloses a heat exchanger comprising a tube 1 having opposed walls 8, 9 and a turbulating insert 5 with lugs 15 thereon; wherein *the prior art welded the lugs directly to the tube walls (1, lines 57-64) for the purpose of minimizing material and weight of the heat exchanger*.

The Examiner agrees the device of Brzezinski discloses a turbulating insert with lugs thereon. However, the recognized prior art in Brzezinski is relied upon to teach welding lugs to the tube

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wall of Karbach et al. As noted, employing welded lugs instead of a turbulator insert with lugs, as in Brzezinski and Karbach et al, minimizes the material and weight of the heat exchanger. The cost effectiveness of the welded lugs is believed to be of no consequence, in view of the weight concern. The fact of the matter is that the prior art discloses welded lugs on tube walls as claimed by applicants' instant invention. Clearly, applicants do not deem welding lugs as a disadvantage or not cost effective.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648.

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Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3743

February 25, 2002